REMARKS

This is in full and timely response to the Office Action dated November 2, 2006.

Reexamination in light of the following remarks is respectfully requested.

Rejection under 35 U.S.C. 103

Page 2 of the Office Action indicates a rejection of claims 1-5 under 35 U.S.C. 103 as allegedly being unpatentable over Japanese Patent Application Publication No. 52-145904 (Suga) and in further view of over Japanese Patent Application Publication No. 58-194970 (Kitamura) and U.S. Patent No. 6,209,603 to Kanenari et al. (Kanenari).

At least for the following reasons, if the allowance of the claims is not forthcoming at the very least and a new ground of rejection made, then a ***new non-final Office Action*** is respectfully requested.

This rejection is traversed at least for the following reasons.

Claims 1-5 – Claims 2-5 are dependent upon claim 1. Claim 1 is drawn to a pneumatic tire comprising

> an adhesive sealant layer in a region corresponding to at least a tread portion on the inner side of the tire,
>
> wherein the adhesive sealant layer is constituted from a rubber composition containing a rubber component to be decomposed by peroxide and 0.2 to 20 parts by weight of peroxide per 100 parts by weight of the rubber component, and fibrillated short fibers with an average length of 100 to 5000 μm are mixed and scattered in the layer.

The following description is provided for illustrative purposes and is not intended to limit the scope of the invention.

The specification as originally filed at paragraph [0028] provides the following.

> Moreover, an average length of the short fibers is adjusted to 100 to 5000 μm. If this average length is less than 100 μm, sufficient effects of improving the seal performance and of preventing the flow of the sealant substance are not obtained. If the average length exceeds 5000 μm, processability in mixing and extrusion of the rubber composition is lowered. Moreover, a blending quantity of the short fibers depends on the length thereof. Specifically, if the length of the short fibers is short, large amounts of short fibers are blended to achieve both of the seal performance and the processability. Meanwhile, if the length of the short fibers is long, a relatively small amount of short fibers are blended. For example, if the length of the short fibers is 4000 μm, it is preferable that 1 to 5 parts by weight of short fibers are blended.

Suga – The Office Action admits that Suga fails to disclose, teach, or suggest the presence of reinforcing fibers (Office Action at page 2).

Thus, Suga fails to disclose, teach, or suggest that an adhesive sealant layer is constituted from a rubber composition containing a rubber component to be decomposed by peroxide and 0.2 to 20 parts by weight of peroxide per 100 parts by weight of the rubber component, and fibrillated short fibers with an average length of 100 to 5000 μm are mixed and scattered in the layer.

Kitamura – The Office Action cites Kitamura for the features that are admittedly absent from within Suga.

The Abstract of Kitamura arguably teaches a crosslinkable sealant composition for preventing tire puncture consists of 10W35pts.wt. rubber component such as at least one member selected from an ethylene/propylene/diene terpolymer, (halogenated) ***butyl rubber*** and a conjugated

diene/butyl rubber, 90W65pts.wt. tackifier such as liquid polybutene, not more than 10pts.wt. (per 100pts.wt. of the combined amount of components A and B) (meth)acryloyl group-contg. monomer such as (meth)acrylic acid, 5W 30pts.wt. ***filler such as silica, glass or short fiber, and not more than 10pts.wt.*** photopolymerization initiator such as benzoin or diacetyl.

The following description is provided for illustrative purposes and is not intended to limit the scope of the invention. The specification as originally filed at paragraph [0028] provides the following.

> Moreover, an average length of the short fibers is adjusted to 100 to 5000 μm. If this average length is less than 100 μm, sufficient effects of improving the seal performance and of preventing the flow of the sealant substance are not obtained. If the average length exceeds 5000 μm, processability in mixing and extrusion of the rubber composition is lowered. Moreover, a blending quantity of the short fibers depends on the length thereof. Specifically, if the length of the short fibers is short, large amounts of short fibers are blended to achieve both of the seal performance and the processability. Meanwhile, if the length of the short fibers is long, a relatively small amount of short fibers are blended. For example, if the length of the short fibers is 4000 μm, it is preferable that 1 to 5 parts by weight of short fibers are blended.

Yet, the Office Action fails to show that the alleged short fiber of Kitamura has an average length of 100 to 5000 μm are mixed and scattered in the layer.

Thus, Kitamura fails to disclose, teach, or suggest that an adhesive sealant layer is constituted from a rubber composition containing a rubber component to be decomposed by peroxide and 0.2 to 20 parts by weight of peroxide per 100 parts by weight of the rubber component, and fibrillated short fibers with an average length of 100 to 5000 μm are mixed and scattered in the layer.

Further, while Kitamura shows to incorporate glass short fiber as filler into an adhesive sealant layer, the glass short fiber is not fibrillated and has no softness. Therefore, if the glass short fiber of Kitamura is added to an adhesive sealant layer, from this the result that the adhering propensity of the adhesive sealant substance about a puncture-causing matter such as a nail is made remarkable and the sealing performance is enhanced can never be expected.

Kanenari - The Office Action contends that Kanenari teaches the presence of reinforcing fibers (Office Action at page 2).

In response to this contention, Kanenari arguably teaches that *compound sheets 16* are laid in the tire widthwise end portions of the belt layers 15a and 15b respectively (Kanenari at column 9, lines 65-66).

However, the Office Action fails to show where within Kanenari there is to be found an adhesive sealant layer.

Kanenari arguably teaches that the ratio of the tire circumferential modulus (b) of the *compound sheets 16* to the tire radial modulus (a) thereof (i.e., b/a ratio) is adjusted to 1.2 or above by incorporating *a short fiber (A')* formed by the fibrillation of a *short fiber (A)* whose cross section takes a sea-island structure essentially *composed of at least two polymers* and, if necessary, *a short fiber (B) made of a thermoplastic polymer* having amido groups in the main chain into the rubber constituting the compound sheets 16 and orienting the *fibrillated short fiber (A')* or the hybridized short fibers (A') and (B) in a tire circumferential direction (Kanenari at column 10, lines 8-18).

Yet, the Office Action *fails* to explain why the skilled artisan would have been motivated to replace the alleged layer 2 of Suga with the *compound sheets 16* of Kanenari. See, for example, *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) and M.P.E.P. §2143.01, section "*The Proposed Modification Cannot Change The Principle Of Operation Of A Reference.*"

Moreover, the Office Action fails to show that the alleged short fiber of Kanenari has an average length of 100 to 5000 μm are mixed and scattered in the layer.

Thus, the Office Action fails to show that Kanenari teaches or suggests that an adhesive sealant layer is constituted from a rubber composition containing a rubber component to be decomposed by peroxide and 0.2 to 20 parts by weight of peroxide per 100 parts by weight of the rubber component, and fibrillated short fibers with an average length of 100 to 5000 μm are mixed and scattered in the layer.

Furthermore, according to Kanenari, the fibrillated short fiber is used for reinforcing a solid-phase tire-forming member (the compound sheet 16). In contrast against this, according to the applicant's claimed invention the fibrillated short fiber is added in a liquid-phase adhesive sealant layer, whereby the propensity of the adhesive sealant layer to adhere to a puncture-causing matter such as a nail can be intensified to have the sealing performance improved, and at the same time, free flowing of the sealant layer is suppressed (specification on file, paragraph [0009]). In other words, the claimed invention and the invention of Kanenari completely differ from each other in respect of the condition or state of the substance to which the fibrillated short fiber is additively incorporated, and accordingly the results of the invention. Thus, there lies absolutely no motivation whereby the fibrillated short fiber of Kanenari is incorporated into the adhesive sealant layer according to the claimed invention.

Based on experimental results (please refer to Table 1 in page 10 of the specification on file), the inventors of the claimed invention became aware of that to add fibrillated short fiber having a specified fiber length to an adhesive sealant layer is effective in enhancing the sealing performance of the sealant layer, to result in the making of the present invention. Kanenari contains no reference or suggestion in this respect.

Claim 2 – Claim 2 is drawn to the pneumatic tire according to claim 1, wherein an inner liner layer is provided on the inner side of the tire, the adhesive sealant layer is disposed on an inner side of the inner liner layer, and a cover sheet rubber layer is disposed on an inner surface of the adhesive sealant layer.

Suga – The Office Action contends that Suga teaches the presence of a protective rubber layer 3 (cover rubber layer) (Office Action at page 3).

However, the Office Action fails to show the presence of an inner liner layer within Suga.

Kitamura – Moreover, the Office Action fails to show the presence of an inner liner layer within Kitamura.

Kanenari – Kanenari arguably teaches the presence of a carcass layer (12, 22, 32, 42, 52). However, the Office Action fails to show the presence of an inner liner layer within Kanenari.

Claim 4 – Claim 4 is drawn to the pneumatic tire according to claim 1, wherein the short fibers have a cross section of a sea-island structure made from at least two kinds of polymers.

Suga – The Office Action *fails to show* Suga as teaching that the short fibers have a cross section of a sea-island structure made from at least two kinds of polymers.

Kitamura – Like Suga, the Office Action *fails to show* Kitamura as teaching that the short fibers have a cross section of a sea-island structure made from at least two kinds of polymers.

Kanenari – The Office Action relies on Kanenari for the teaching of short fibers having a cross section of a sea-island structure made from at least two kinds of polymers (Office Action at page 3).

However, the Office Action *fails* to explain why the skilled artisan would have been motivated to replace the alleged layer 2 of Suga with the *compound sheets 16* of Kanenari. See, for example, *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) and M.P.E.P. §2143.01, section "*The Proposed Modification Cannot Change The Principle Of Operation Of A Reference.*"

Claim 5 – Claim 5 is drawn to the pneumatic tire according to claim 1, wherein the short fibers have a cross section of a sea-island structure made from a polyvinyl alcohol polymer (A) and a water-insoluble polymer (B), and have a weight ratio (A)/(B) of 90/10 to 80/20.

Suga – The Office Action *fails to show* Suga as teaching that the short fibers have a cross section of a sea-island structure made from a polyvinyl alcohol polymer (A) and a water-insoluble polymer (B), and have a weight ratio (A)/(B) of 90/10 to 80/20.

Kitamura – Like Suga, the Office Action *fails to show* Kitamura as teaching that the short fibers have a cross section of a sea-island structure made from a polyvinyl alcohol polymer (A) and a water-insoluble polymer (B), and have a weight ratio (A)/(B) of 90/10 to 80/20.

Kanenari – The Office Action relies on Kanenari for the teaching of the short fibers having a cross section of a sea-island structure made from a polyvinyl alcohol polymer (A) and a water-insoluble polymer (B), and have a weight ratio (A)/(B) of 90/10 to 80/20 (Office Action at page 3).

In this regard, Kanenari arguably teaches that a preferable example of the short fiber (A) to be used in the present invention is a short fiber at least comprising a polyvinyl alcohol polymer (X) and a water-insoluble polymer (Y) at an X/Y weight ratio of 90/10 to 20/80 and having a sea-island structure wherein one of X and Y is present as the island component and the other thereof is present as the sea component (Kanenari at column 18, line 63 to column 19, line 2). In this short fiber, a sea-island structure is formed by a combination of a polyvinyl alcohol polymer (X), which is a water-soluble polymer with a water-insoluble polymer (Y) (such as cellulose acetate or starch) which is not dissolved in water even when immersed in water at ordinary temperature (Kanenari at column 19, lines 2-7). A polyvinyl alcohol polymer exhibits high strength and excellent affinity for rubbers (Kanenari at column 19, lines 7-8). When the content of the polyvinyl alcohol polymer (X) in the short fiber exceeds 90% by weight, the resulting short fiber will not be divided by mechanical shear force applied during the kneading of the rubber composition (Kanenari at column 19, lines 8-

12). When it is less than 20% by weight, no reinforcing effect will be attained (Kanenari at column 19, lines 12-13).

As previously noted, Kanenari arguably teaches that the ratio of the tire circumferential modulus (b) of the *compound sheets 16* to the tire radial modulus (a) thereof (i.e., b/a ratio) is adjusted to 1.2 or above by incorporating *a short fiber (A')* formed by the fibrillation of a *short fiber (A)* whose cross section takes a sea-island structure essentially *composed of at least two polymers* and, if necessary, *a short fiber (B) made of a thermoplastic polymer* having amido groups in the main chain into the rubber constituting the compound sheets 16 and orienting the *fibrillated short fiber (A')* or the hybridized short fibers (A') and (B) in a tire circumferential direction (Kanenari at column 10, lines 8-18).

However, the Office Action *fails* to explain why the skilled artisan would have been motivated to replace the alleged layer 2 of Suga with the *compound sheets 16* of Kanenari. See, for example, *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) and M.P.E.P. §2143.01, section "*The Proposed Modification Cannot Change The Principle Of Operation Of A Reference.*"

Withdrawal of this rejection and allowance of the claims is respectfully requested.

Conclusion

For the foregoing reasons, all the claims now pending in the present application are allowable, and the present application is in condition for allowance.

Accordingly, favorable reexamination and reconsideration of the application in light of the amendments and remarks is courteously solicited.

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

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Respectfully submitted,

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